Gas Chromatographic Retention Parameters Databases: Analysis of Natural Gas Heavy Components and Odorization Compounds

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Many important operational and quality control parameters required for the transmission and distribution of natural gas depend upon a compositional (qualitative and quantitative) analysis of the gas. Examples include the calorific value of natural gas, which is calculated from a model based upon composition. Moreover, many regulations that govern the compliance with gas quality regulations require a chemical analysis. The preferred method of analysis of natural gas is the application of gas chromatography, employing methods to identify and quantitative the lightest components (the standard natural gas analysis) and heavy components (the extended natural gas analysis). In this demonstration, two databases that provide the user with identification of gas constituents from correlations of chromatographic retention parameters (relative retention, net retention volume and Kovats retention indices) for hydrocarbons, odorants and treatment compounds will be presented. The function of the databases will be described, with emphasis on compound identification and chromatogram prediction. Several illustrative examples will be discussed, drawn from actual field and laboratory problems.